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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,160	12/31/2003	Vlad Novotny	AO-008	1613
27946	7590	09/08/2005	EXAMINER	
ARTHUR J. BEHIEL 6601 KOLL CENTER PARKWAY SUITE 245 PLEASANTON, CA 94566			ROJAS, OMAR R	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

# Office Action Summary

Application No.

10/751,160

Applicant(s)

NOVOTNY, VLAD

Examiner

Omar Rojas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 20-46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on December 31, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 0404, 1204.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☒ Other: Detailed Action.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-19, drawn to an optical switch with mirrors, classified in class 385, subclass 18.
  - II. Claims 20-46, drawn to an electrostatic actuator, classified in class 310, subclass 309.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because other types of electrostatic actuators having different structural features may be used to drive the mirrors. The subcombination has separate utility such as for actuating different devices like optical shutters, for example.

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Arthur J. Behiel on August 26, 2005 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-19.

Affirmation of this election must be made by applicant in replying to this Office action. Claims

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20-46 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Information Disclosure Statement***

5. The prior art documents submitted by applicant in the Information Disclosure Statement(s) filed on December 17, 2004 and April 29, 2004 have all been considered and made of record (note the attached copy of form(s) PTO-1449).

***Specification***

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Objections***

7. Claim 4 is objected to because of the following informalities: Claim 14 recites the limitation "*the array*." There is insufficient antecedent basis for this limitation as recited in the claim. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

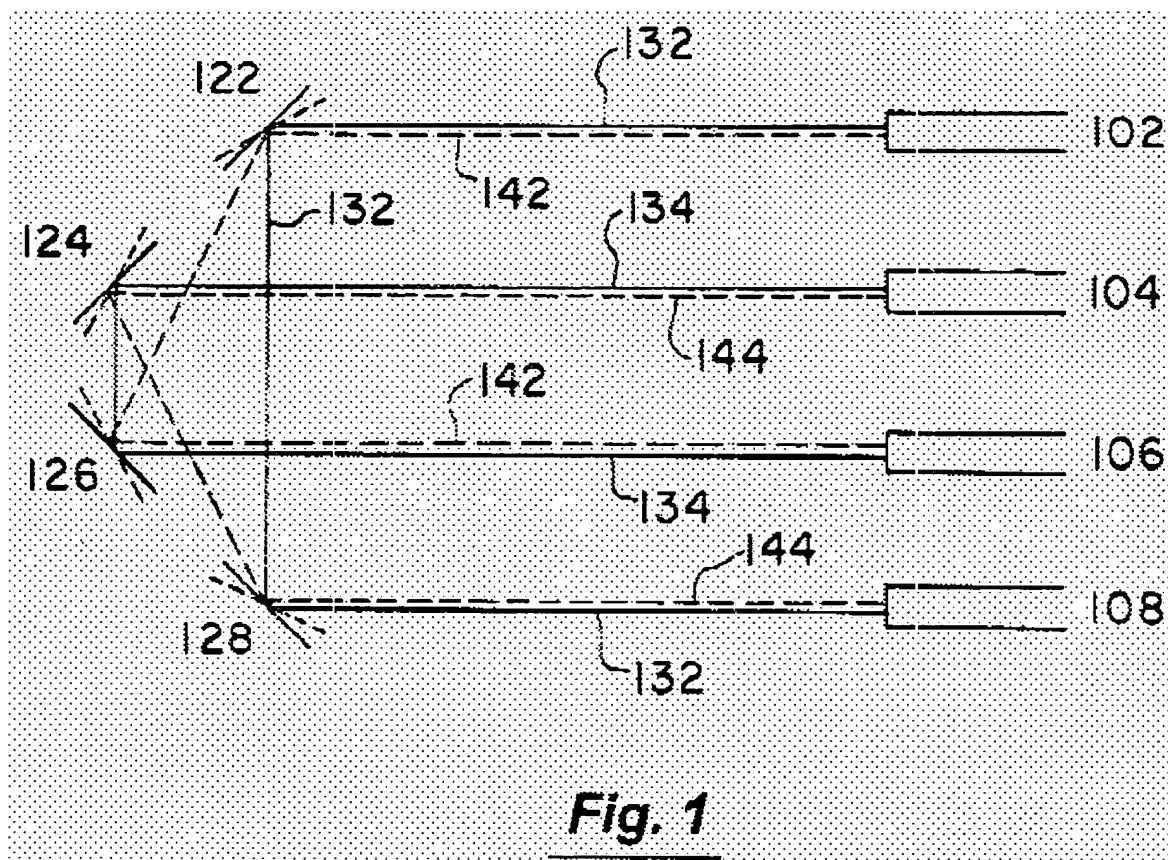
A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. **Claims 1-4, 6-12, and 16-19 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by USP 6,542,657 B2 to Anderson.**

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Regarding claims 1-4, 6-8, 10-12, and 16, the claimed invention is clearly shown in Figure 1 of the Anderson patent and as described in column 4, line 55 to column 5, line 3. Figure 1 of Anderson is reproduced below.



Regarding claims 9 and 17-19, the use of electrostatic comb actuators to actuate the MEMS micromirrors (122, 124, 126, 128) of Anderson would be considered inherently present in Anderson because some form of actuator must be used in Anderson in order for the micromirrors (122, 124, 126, 128) to move. Alternatively, it would have been obvious to use electrostatic comb actuators in Anderson because, at the time of the claimed invention, electrostatic comb actuators were generally well-known MEMS actuators. See, for example, USP 5,960,132 at col. 8, lines 39-54.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

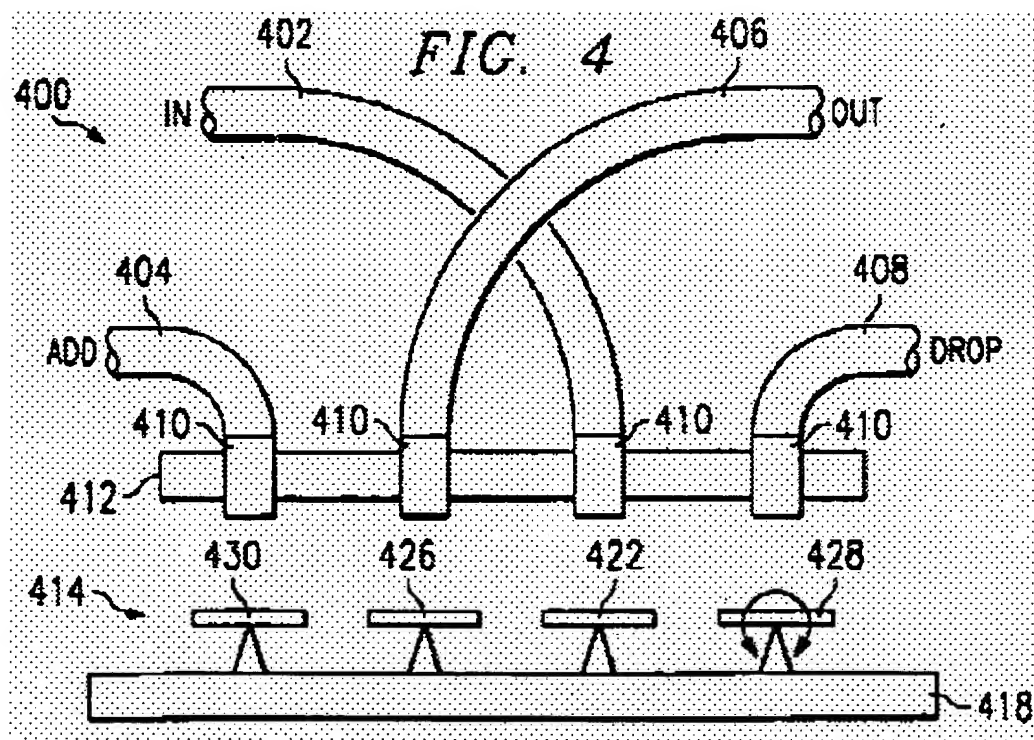
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. **Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson as applied to claim 1 above, and further in view of USP 6,816,640 B2 to Tew.**

Regarding claim 5, Anderson teaches all the limitations of claim 1 as previously discussed.

Anderson fails to teach a mirror disposed in the paths of the first and second beams between the first bi-stable mirror and the second bi-stable.

The Tew patent discloses such a mirror 412 as seen in his Figure 4, reproduced below.



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The motivation to combine the teachings of Tew with Anderson is because the mirror 412 of Tew allows his bi-stable mirrors (422, 426, 428, and 430) to be integrated on a common substrate 418, thereby allowing a linear space-saving configuration as shown in Figure 4 of Tew. See also Tew at column 8, lines 32-39.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 5 when Anderson is combined with Tew.

**12. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson as applied to claim 1 above, and further in view of USP 6,456,751 B1 to Bowers et al. (hereinafter "Bowers," provided in an Information Disclosure Statement).**

Regarding claims 13-15, Anderson teaches all the limitations of claim 1 as previously discussed. Anderson fails to teach first and second photodetectors for monitoring beam intensities in the waveguides and control electronics for controlling his mirrors in response to feedback signals provided by the photodetectors

The Bowers patent discloses using a photodetector 58 to monitor a beam intensity from a waveguide 38. Bowers further discloses control electronics 24,52 for receiving a feedback signal from the photodetector and controlling a mirror in response to the feedback signal.

The motivation for combining Bowers with Anderson is to allow optimization of output optical power for each mirror. Bowers at col. 2, lines 43-45. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention of claims 13-15 by combining Bowers with Anderson.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas  
Patent Examiner  
Art Unit 2874

or  
September 6, 2005